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# APS/SDG&E Interconnection Project

## RECORD OF DECISION



U.S. Department of the Interior  
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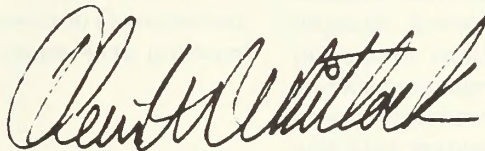
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**RECORD OF DECISION**

**APS/SDG&E INTERCONNECTION PROJECT**

**U.S. DEPARTMENT OF THE INTERIOR**

**BUREAU OF LAND MANAGEMENT**



**CLAIR M WHITLOCK**

**ARIZONA STATE DIRECTOR**

**December 1, 1981**

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## DECISION

The Bureau of Land Management (BLM) will issue a right-of-way on public land to Arizona Public Service Company (APS) and San Diego Gas and Electric Company (SDG&E) for a 500kV transmission line and ancillary facilities pursuant to Title V of the Federal Land Policy and Management Act of 1976 (FLPMA).

The transmission system will interconnect the electric power networks of APS, SDG&E, and the Imperial Irrigation District from the Palo Verde Nuclear Generating Station Switchyard, near Phoenix, Arizona, through the Yuma Arizona area, through the Imperial Valley, California, to the Miguel Substation near San Diego, California.

The route chosen on public lands is essentially the same as the northern environmentally preferred route. It uses the northerly Sand Hills crossing in California with a minor deviation in Arizona. The deviation was made to accommodate local preferences and conform with a route recommended by the Arizona Power Plant and Transmission Line Siting Committee and certified by the Arizona Corporation Commission. The route crosses the Dome Valley and the Laguna Mountains to the north of the environmentally preferred route.

At this time, no decision can be made on which routes will be approved north of the Wellton Mohawk area. The decision on routes to the north of the Mohawk Valley, and whether to cross the Muggins Mountains or use the more southerly environmentally preferred route will depend on the outcome of any protests or appeals of my decision to consider Wilderness Inventory Units AZ-530-53A and AZ-530-53B not suitable as wilderness study areas. All of the routes were certified by the Arizona Corporation Commission, although both of the northern routes were preferred (see schematic route map).

## ALTERNATIVES INCLUDING PROPOSED ACTION

Five general alternatives were considered to meet the need for oil and gas displacement and additional power in the APS Lower Colorado River and SDG&E service territories: (1) no action, (2) energy conservation and load management, (3) alternative generating sources, (4) alternative transmission systems and technologies, (5) the proposed action with routing alternatives.

### No Action

Under no action, the utilities would try to meet their need for additional power, using existing facilities and mitigating measures to compensate for the expected energy shortfall. The utility, however, could not meet their objective for oil and gas displacement.

The no action alternative would save construction costs for new facilities and preclude associated adverse environmental impacts. But it would result in increased generation from existing oil and gas-fired units, increased fuel costs and customer rates, and decreased air quality in Yuma and San Diego. Moreover, it would not compensate for the expected energy shortfall.

Increased generation from existing oil and gas-fired units would increase the oil dependence of both utilities, conflicting with the Federal energy policy of the Powerplant and Industrial Fuel Use Act of 1978.

APS and SDG&E are 70 and 82 percent oil and gas dependent respectively in their Yuma and San Diego service territories. The inflationary pressure wrought by the high cost of oil and gas has given San Diego the second highest utility rates in the country.

Any increased burning of oil would deteriorate air-quality in Yuma and San Diego. Increased emissions of suspended particulates, nitrogen oxides, and sulphur dioxide might require retrofitting emission controls at high costs and increase consumer energy bills.

According to current demand forecasts, APS and SDG&E will experience an energy shortfall in the mid-to-late 1980s under existing and committed capacity with firm transmission. San Diego and Yuma could be subject to rolling blackouts and brownouts and a moratorium on new hook-ups.

## Energy Conservation and Load Management

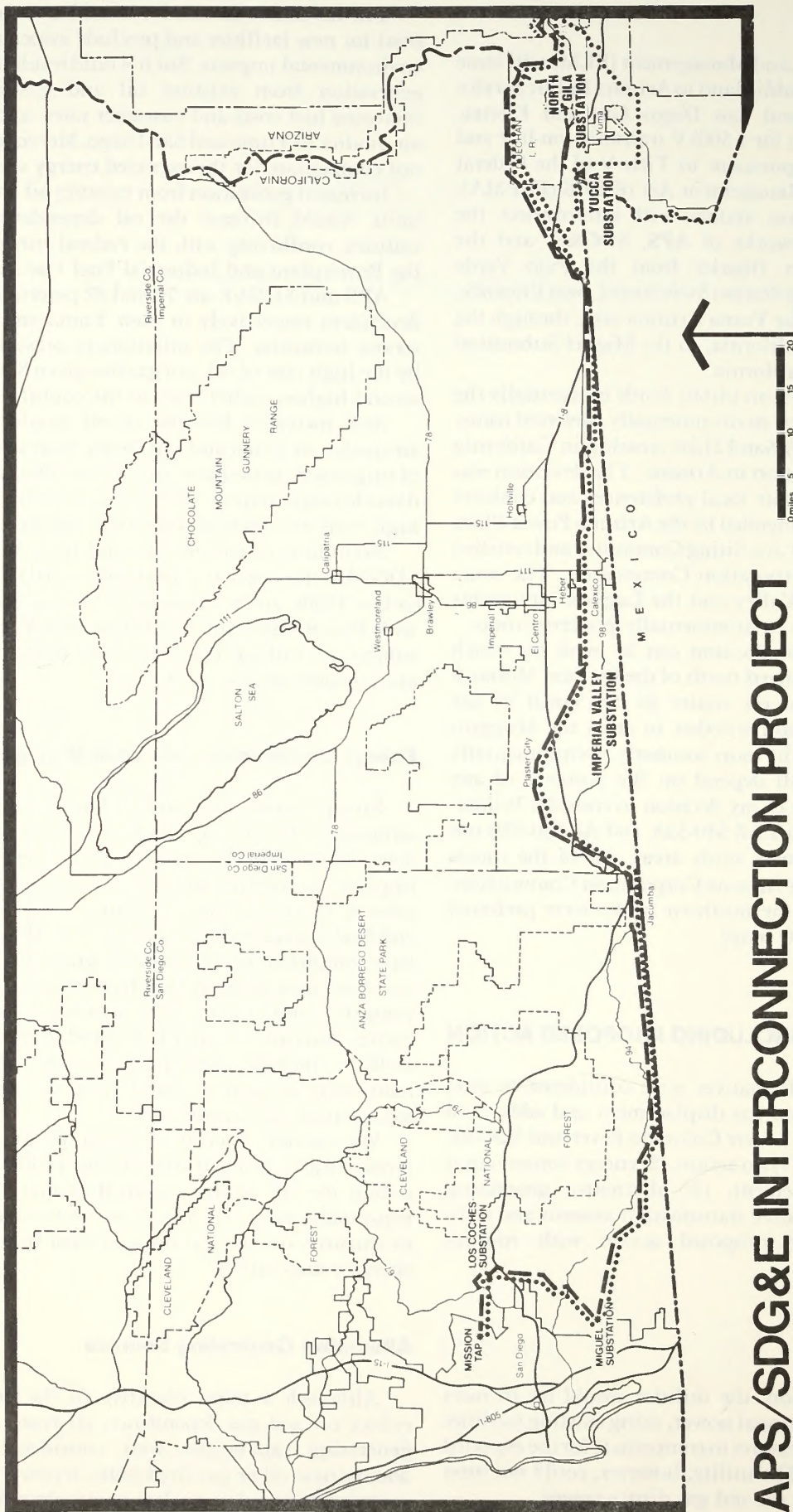
Energy conservation and load management have the advantage of reducing energy consumption and peak demand without documented adverse environmental impacts. Economic and other constraints, however, prevent or inhibit implementing some conservation and load management programs. Both APS and SDG&E have comprehensive on-going programs in conservation and load management that have reduced energy consumption and system peak demand below levels in earlier forecasts. Current demand forecasts for the utilities include anticipated energy savings and reductions in peak demand from conservation and load-management programs.

We cannot determine which programs will be economically prudent and receive public acceptance within the life of the proposed Project. Nor can we reasonably assess savings from additional programs or quantify oil-and-gas displacement from additional energy conservation.

## Alternative Generating Sources

Although a main objective of the utilities is to reduce oil and gas dependence, all types of potential generating capabilities were considered, including adding new oil or gas-fired units, repowering existing units, adding coal or nuclear plants, developing hydro-electric facilities, developing geothermal power,



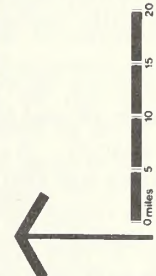
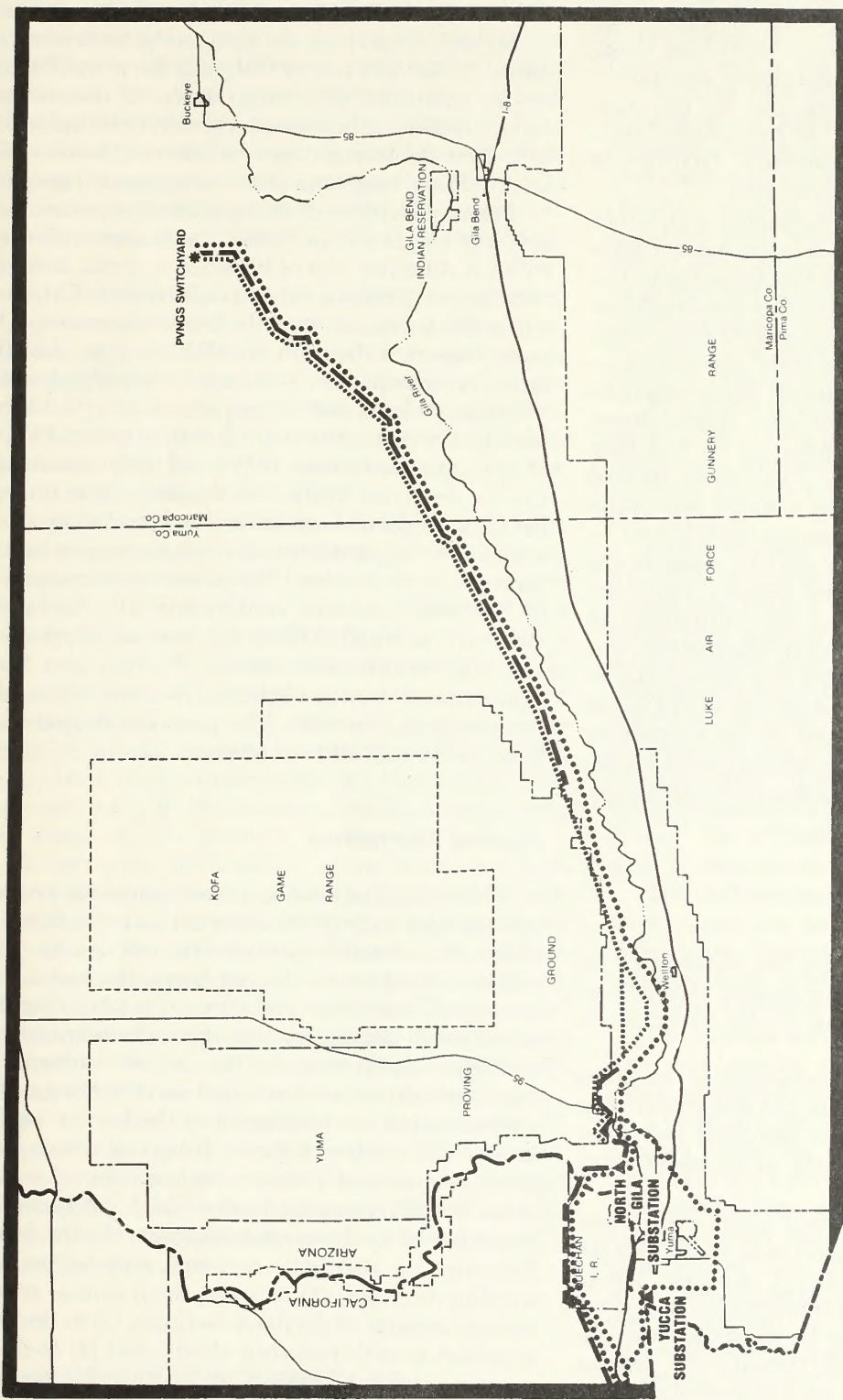


# APS/SDG&E INTERCONNECTION PROJECT

## ROUTES

- BLM Approved
- ..... Environmentally Preferred
- ..... Arizona Power Plant and Transmission Line Siting Committee Approved

# APS/SDG&E INTERCONNECTION PROJECT



## ROUTES

- BLM Approved
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cogeneration, purchases from Mexico, wind turbines, solar energy, biomass, and new technologies. We do not believe these alternatives are reasonable because of constraints of capital costs, national energy policy, environmental regulations, state-of-the-art technologies, and lead-time required to build new generating facilities in relation to time-of-need. APS's long range forecast could not justify additional generating capability until 1990. For SDG&E, most of the alternative generating sources would be located off-system and would require new transmission facilities to deliver energy to the SDG&E service area.

In addition to considering individual generation alternatives, the EIS considered the cumulative effects of the alternatives in combination that passed an initial screening based on the criteria that they reduce oil/gas requirements and meet the time limit of the stated need. A potential range of capacity for eight alternatives — additional conservation, hydroelectric and geothermal development, purchases from Mexico, cogeneration, wind, solar and biomass development — was then compared to realistic estimates. The results showed that if total maximum potential capacity were fully realized, SDG&E's projected capacity-needs would be met through 1988. The values used to quantify the range of potential capacity and realistic estimates, however, were conjectural, and the availability of maximum capacity from all eight alternatives was uncertain. The EIS thus concluded that the cumulative effects of the alternatives in combination could not be considered to meet the stated need. In the Yuma area, where none of the alternatives is independently viable, their combined effects would not meet the stated need.

### **Alternative Transmission Systems and Technologies**

This alternative would meet the stated need to transfer energy from generating sources outside San Diego and Yuma using existing or new transmission systems or technologies.

No existing or planned transmission facilities directly connect PVNGS with the SDG&E service area. Lines indirectly connecting the two areas are either fully utilized or fully committed to future planned requirements.

Transmission lines of voltage levels other than 500kV were considered and found to be unsuitable for the desired capacity. A direct current power transmission-system was also considered but found not to be economically competitive for route distances less than 400 miles. Underground transmission systems were evaluated as alternatives, but they were eliminated because of technical complications, economic and environmental costs, and accessibility. These systems, however, would avoid some adverse visual and aesthetic impacts.

### **Proposed Action**

On the basis of economic, environmental, national energy-policy and state-of-the-art constraints of the alternatives described above, we consider the proposed action as the best means to (1) help reduce dependence on oil and natural gas for generating electricity consumed in the APS Lower Colorado River and SDG&E service territories; (2) furnish access to the economy energy market; (3) enhance system reliability; and (4) help meet the forecast need for power of both utilities by providing long-term firm transmission capacity.

Primary facilities of the proposed Project include a 280-mile single-circuit 500kV transmission line from PVNGS, 40 miles west of Phoenix, Arizona, to Miguel Substation, 10 miles southeast of San Diego, California, and a double-circuit 24-mile 230kV transmission line from Miguel Substation to Mission Tap. Ancillary facilities include new intermediate 500kV substations at Yuma, Arizona and the Imperial Valley, California; modified or expanded existing substations at PVNGS, Miguel and Los Coches; 161kV and 69kV transmission lines to interconnect the 500kV transmission line with the local power network in the Imperial Valley and the Yuma Area respectively and communication facilities throughout the system. The power-transfer-capability of the 500kV system would nominally be rated at 1000 MW, of which APS would have an 11 percent (or 110 MW) entitlement between PVNGS and Yuma. Construction would begin in January 1982 and be completed in May 1984. The proposed Project would have an estimated life of 50 years.

### **Routing Alternatives**

Environmental studies, including those at a regional and corridor scale were conducted for more than 1,100 miles of alternative transmission line routes. These studies helped to develop an environmental baseline for impact assessment and mitigation planning. They inventoried conditions for air, geotechnical, and ecological resources in the natural environment; land uses, agricultural resources and socioeconomic, visual and acoustical characteristics of the human environment; and archaeological, historical, and Native American cultural resources in the cultural environment. Studies were also conducted (1) to determine the feasibility of the International Border, Salton Sea and Banning Pass alternative corridors, proposed in public scoping meetings; (2) to assess the potential environmental impacts of ancillary facilities; (3) to determine potential growth-inducing effects; and (4) to analyze potential electrical, biological, health and safety effects from the proposed Project.

The draft, supplement, and final EIS compared the environmental impacts of each routing alternative. Specialists studied all links in equal detail, simplified the presentation by eliminating some obviously inferior routes, and explained the rationale for eliminating



those routes. All the links studied were considered in making this decision.

To identify the environmentally preferred route, the resources study team summarized the cumulative environmental consequences for each route from impact characterizations, significant unavoidable adverse impacts, individual routing-preferences according to specific resources, and agency/public comments. The least potential-impact or "environmentally preferred" routes were then identified from the cumulative environmental consequences, considering the particular Project components relevant to each route, (e.g., 500kV transmission line substation, 161kV transmission system, 69kV transmission system).

In the Yuma area, two environmentally preferred routes were chosen. Each route reflects a different set of values or point of view in trade-offs between resources. The southern preferred alternative represents the route with the least cumulative environmental consequences. The northern preferred alternative responds to public concerns and gives greater significance to land use conflicts and agricultural impacts.

Two crossings of the Imperial Sand Dunes in California are environmentally preferred. Potential impact levels for all resources and land uses were similar on both routes. The northern route was chosen as it is slightly shorter and less costly to build.

To accommodate local and state preferences in Arizona, the BLM preferred route deviated from the environmentally preferred route in one area. The deviation would not have impacts that differ significantly from the environmentally preferred route. The route selected by BLM is environmentally, economically, and technically acceptable.

At this time, no decision can be made on which routes will be approved north of the Wellton-Mohawk area. The decision to use link 88 or the more southerly links 23 and 26 north of the Mohawk Valley, and link 28 across the Muggins Mountains or the more southerly route following links 29, 30a and 30b will depend on the outcome of any protests or appeals of my decision to consider Wilderness Inventory Units AZ-530-53A and AZ-530-53B not suitable as wilderness study areas. All of the routes were certified to be environmentally compatible by the Arizona Corporation Commission, although the northern routes (links 88 and 28) were preferred. Both of the southern routes (links 23 and 26, and links 29, 30a and 30b) are the environmentally preferred routes.

## MANAGEMENT CONSIDERATIONS

BLM considers the granting of a right-of-way to the Applicants to be the best option among all of the reasonable alternatives. Under the Federal Land Policy and Management Act (FLPMA), BLM must manage public lands under the principles of multiple use,

managing the various resources to best meet the needs of the public and our society. The conflict in BLM's mission is to protect the quality of the land resources, environment and public values while permitting development and uses, like a transmission line, which will help meet society's needs. Accommodating a transmission line will cause some damage to the resources and values.

BLM is acutely aware of the many concerns expressed about potential impacts of the proposal. To the fullest extent possible, BLM gave special consideration to each of the major issues frequently raised by the public: agricultural impacts, electrical effects, property values, growth impacts, alternative energy sources and conservation, underground construction, use of public vis-a-vis private land, ecological vis-a-vis human values, Link 28 (Muggins Mountain), avoiding Eucalyptus Hills, the validity of corridor-scale studies and the corridor selection process, and bird-collision hazard.

As a result of public concern and comments, additional studies were performed on routing alternatives, substation locations, electrical effects, agricultural impacts, growth inducement, undergrounding, and bird collision.

Linear land-use features (roads, pipelines, railroads, and other transmission lines) were considered relatively compatible with a 500kV transmission line. These linear uses represent potential opportunities to use existing rights-of-way and potentially reduce the visual and physical impacts of major transmission lines. We believe the corridor concept is sound and basic to land management and land-use planning. Section 503 of the FLPMA states, "In order to minimize adverse environmental impacts and the proliferation of separate rights-of-way, the utilization of rights-of-way in common shall be required to the extent practical."

The environmental studies and analysis were based on resources and land uses, not on land ownership or jurisdiction. Approximately 50 percent of the BLM preferred route crosses public lands.

Some environmental elements are exclusionary (e.g. wilderness areas) in the siting of a transmission line. Any routing decision reflects a different set of values or point of view in trade-offs between resources.

The BLM route chosen has one minor deviation, in Arizona, from the environmentally preferred route. The deviation was made to accommodate local preferences and conform with a Certificate of Environmental Compatibility issued by the Arizona Corporation Commission. The desires of local and state interests were carefully weighed against the increased environmental impacts, to reach what we believe to be a balanced and rational decision.

In late June and early July of 1979, public scoping meetings were held in Phoenix and Yuma, Arizona and La Mesa (San Diego) and El Centro, California to obtain information for the scoping process. Ninety-six people attended the meetings. The meetings were held to provide information on the proposed project and to elicit public concerns, comments, and issues from the



attendees. Each meeting provided an overview of the proposed project (purpose and need, construction procedures, scheduling) and the preliminary study corridors under consideration. Suggestions were requested for additions or modifications to the preliminary study corridor locations and significant environmental and other issues associated with the proposed project. From oral comments received during the scoping meetings and written comments received as a result of news releases, direct mailings, and articles about the proposal and scoping meetings, the alternative corridor network was determined. Information developed during the scoping process formed the basis for developing the work plan for the environmental baseline, impact assessment, and mitigation planning studies undertaken for the project.

To report back to the public, BLM compiled and summarized the major scoping comments and mailed the summaries to attendees of the scoping meetings and to the rest of the 650 addresses to which the original scoping meeting notices had been sent. The mailing included a map showing all alternative corridors to be studied.

The corridor studies program in the fall of 1979, contacted 149 agencies and 222 individuals or interest groups.

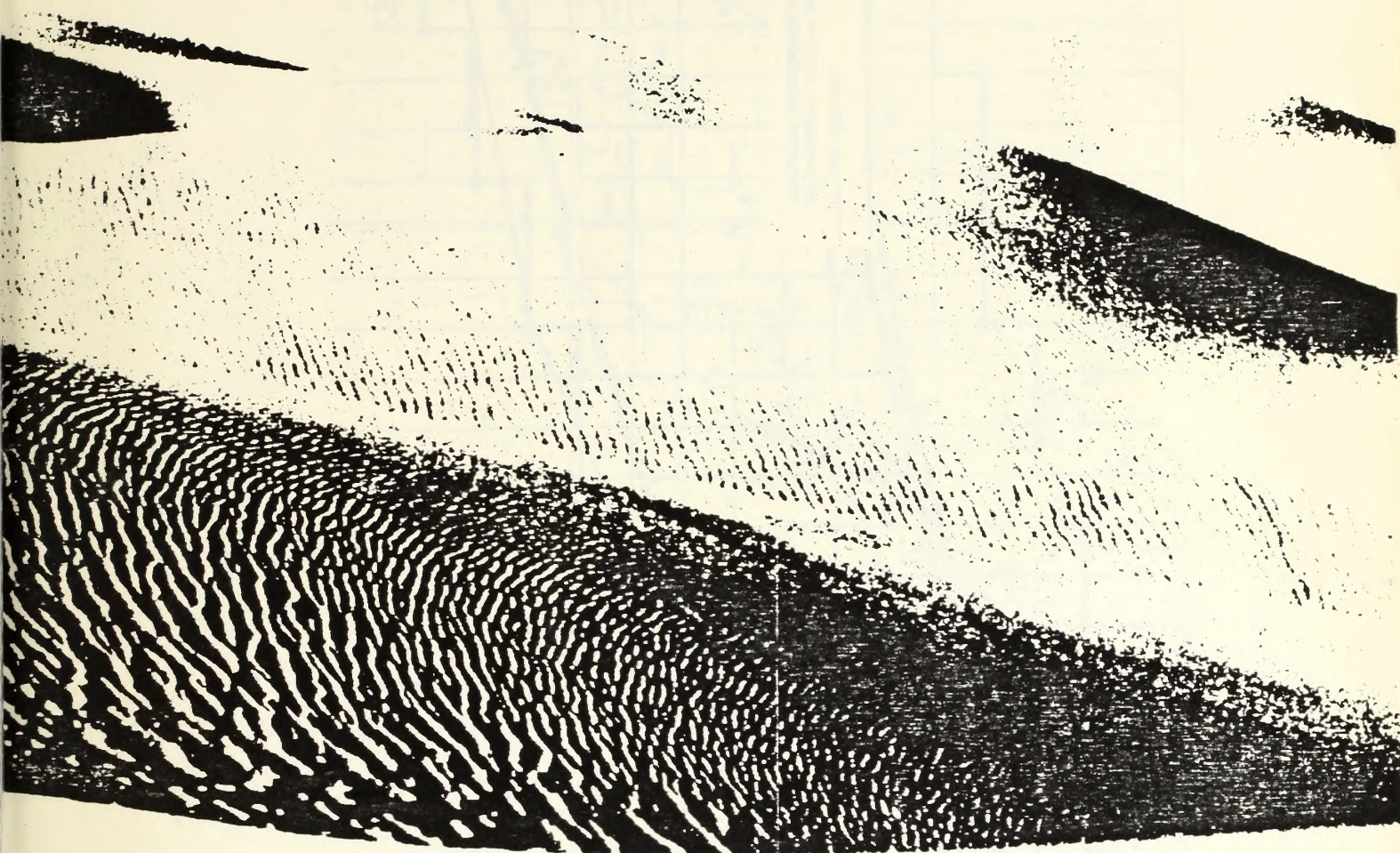
In August 1980, 1,200 copies of the draft environmental document were sent to Federal, state and local government agencies, institutions, organizations and individuals for review and comment. Approximately 530 people, representing a broad range of interests, attended the four public hearings on the draft. Of these attendees 77 testified. In addition, 122 letters were received.

As a result of comments, suggestions, and requests by individuals and public entities, and the applicant's changing the project description, a decision was made to issue a supplement to the draft document.

In April 1981 approximately 1,200 copies of the supplement were distributed for review and comment. Three hearings were held in which 235 people attended and 71 testified. Eighty letters were received on the supplement.

On October 2, 1981 about 1200 copies of the final environmental document were distributed.





**APS/SDG&E**  
**Interconnection Project**  
**SUPPLEMENTAL**  
**RECORD OF DECISION**  
**(MUGGINS MOUNTAIN SEGMENT)**



U.S. Department of the Interior  
Bureau of Land Management



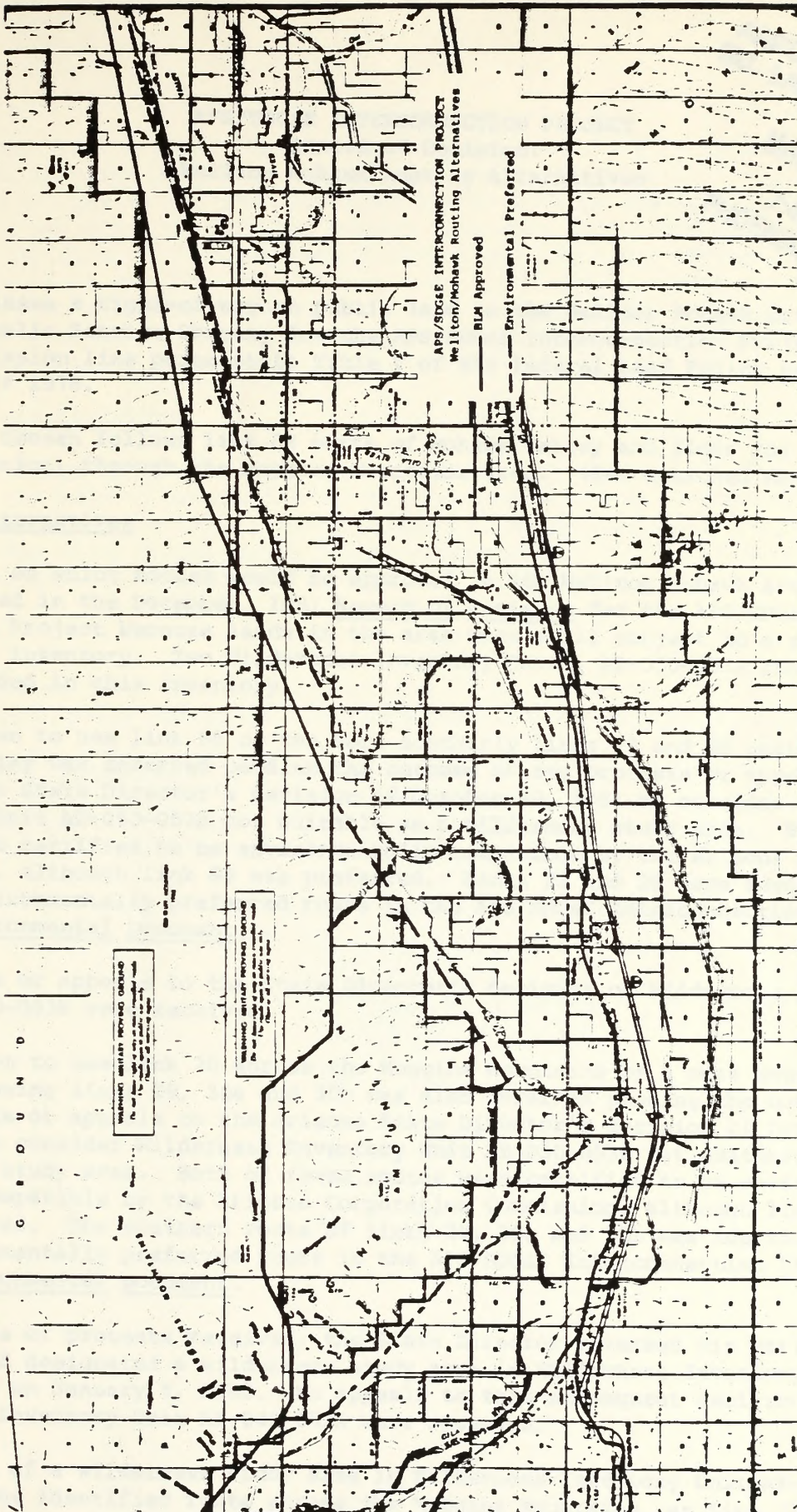
APR/2004  
Interconnection Project  
SUPPLEMENTAL  
RECORD OF DECISION  
(MOUNTAIN MOUNTAIN SEGMENT)

U.S. Department of the Interior  
Bureau of Land Management





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APS/SDG&E INTERCONNECTION PROJECT  
Record of Decision:  
Wellton Mohawk Routing Alternatives

ARIZONA STATE OFFICE  
BUL. LAND MANAGEMENT  
MAR 29 1982  
7:45 A.M.  
PHOENIX, ARIZONA

Decision

BLM will issue a right-of-way on public land in the Wellton Mohawk area to Arizona Public Service Company for the APS/SDG&E Interconnection Project 500 kV transmission line pursuant to Title V of the Federal Land Policy and Management Act of 1976.

The route chosen follows link 88 north of Mohawk Valley and links 28a and 89 (YPG Variation) through the Muggins Mountains area. (See attached map.)

Routing Alternatives

A decision on which routes would be approved in the Wellton Mohawk area was not included in the December, 1981 Record of Decision for the APS/SDG&E Interconnection Project because lands in the area were still subject to a special wilderness inventory. Two Wilderness Inventory Units, AZ-050-053A and AZ-050-053B, were included in this inventory.

The decision to use link 88 or the more southerly links 23 and 26 north of the Mohawk Valley was deferred pending the outcome of any protests or appeals to the Arizona State Director's decision of October 30, 1981 to consider Wilderness Inventory Unit AZ-050-053B not suitable as a wilderness study area. Both routes were certified to be environmentally compatible by the Arizona Corporation Commission, although link 88 was preferred. Links 23 and 26 were identified as the environmentally preferred route in the APS/SDG&E Interconnection Project Final Environmental Document.

No protests or appeals to the State Director's decision on Wilderness Inventory Unit AZ-050-053B were received.

The decision to use link 28 across the Muggins Mountains or a more southerly route following links 29, 30a and 30b was also deferred pending the outcome of any protests or appeals to the Arizona State Director's decision of October 30, 1981 to consider Wilderness Inventory Unit AZ-050-053A not suitable as a wilderness study area. Both of these routes were certified to be environmentally compatible by the Arizona Corporation Commission, although link 28 was preferred. The southern route of links 29, 30a and 30b was identified as the environmentally preferred route in the APS/SDG&E Interconnection Project Final Environmental Document.

On the basis of protests received, the State Director reversed his earlier decision and designated a wilderness study area in Wilderness Inventory Unit AZ-050-053A on January 5, 1982. No appeals to this subsequent decision on Wilderness Inventory Unit AZ-040-053A were received.

Designation of a wilderness study area in Wilderness Inventory Unit AZ-050-053A precluded the identified route across the Muggins Mountains, as link 28 traversed the unit. Consequently, link 89 was added to the routing network to provide a new







northerly route that avoided the wilderness study area. Two variations to this new link (the YPG Variation and the Klothos Temple Variation) were identified. The addition of Link 89 and the subsequent subdivision of existing links resulted in a new route through the Muggins Mountains consisting of links 28a and 89 (YPG Variation or Klothos Temple Variation), and a new southerly route consisting of links 29, 30a, 30b and 86a. The route consisting of links 29, 30a, 30b and 86a, was identified as the environmentally preferred route in the environmental assessment of routing alternatives for the APS/SDG&E Interconnection Project in the Muggins Mountains.

#### Management Considerations

The deviation from the environmentally preferred route through the Wellton Mohawk area was made to accommodate local preferences and to conform with a route recommended by the Arizona Power Plant and Transmission Line Siting Committee. The route chosen would not have impacts that differ substantially from the environmentally preferred route.

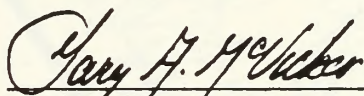
#### Mitigation

The mitigation measures that will be applied to the route are the same as those described in the APS/SDG&E Interconnection Project Record of Decision.

#### Monitoring and Enforcement

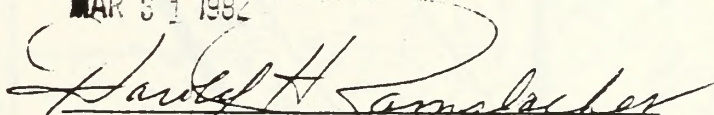
The monitoring and enforcement program that will be applied to the route is the same as the one described in the APS/SDG&E Interconnection Project Record of Decision.

RECOMMENDED BY:

  
\_\_\_\_\_  
Acting District Manager

MAR 31 1982

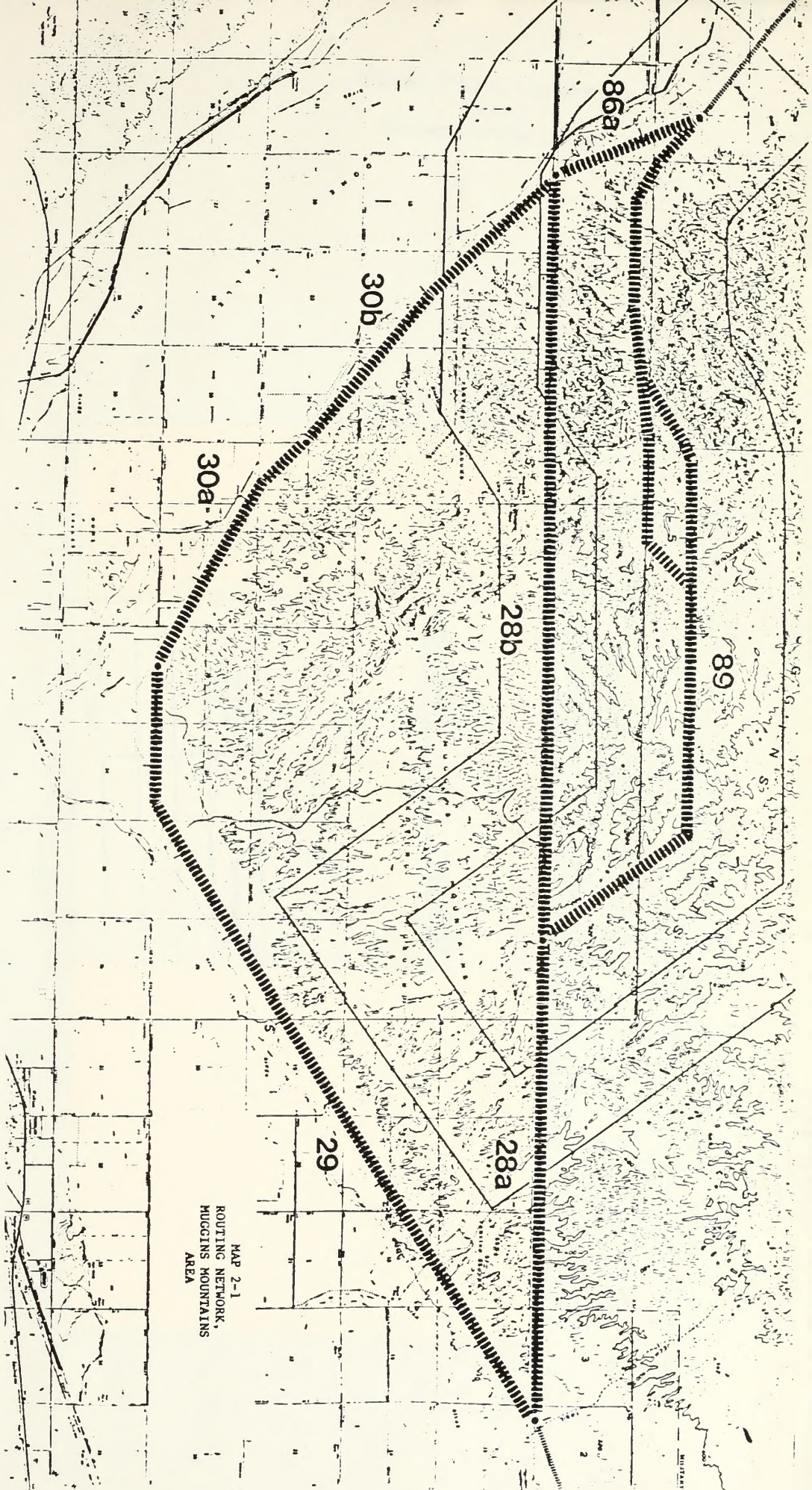
CONCURRED BY:

  
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Acting State Director

APR 2 1982













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(June 1984)

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